UNESA	**UNIVERSITAS NEGERI SURABAYA** **FACULTY OF MATHEMATICS AND NATURAL SCIENCES** **UNDERGRADUATE PROGRAMME OF MATHEMATICS EDUCATION**	**Document Code**

SEMESTER LEARNING PLAN

Name of Module	**Code**	**Module Cluster**	**Credits**		**Semester**	**Date of Preparation**
School Mathematics	8420203111	Mathematics studies	**T = 3**	**P = 0**	5	August 29th, 2020

Authorization	**Lesson Plan Creator**	**Module Coordinator**	**Head of UPME**
	Dr. Pradnyo Wijayanti, M.Pd.		Rooselyna Ekawati, Ph.D.

Learning Achievement	**Programme Learning Outcomes (PLO)**	
	KNO-2	Demonstrate pedagogical knowledge in designing, implementing and evaluating Mathematics' learning.
	SKI-1	Design, implement and evaluate mathematics' teaching and learning by using ICT
	COM-1	Communicate idea and research result effectively orally and literally.
	COM-2	Make decision based on data/information in solving task that become students' responsibility and evaluate the work that has been done.
	SOC-1	Demonstrate scientific attitude, critical and innovative in mathematics teaching and learning and professional task.
	Course Learning Achievements (CLO)	
	KNO-2	
	CLO-1	Demonstrate knowledge related to School Mathematics course.
		1. Demonstrate knowledge related to mathematics in junior high school.
		2. Demonstrate knowledge related to mathematics in senior high school.
	SKI-1	
	CLO-2	Design, carry out, and evaluate mathematics learning process using ICT related to School Mathematics course.
		1. Design, carry out, and evaluate mathematics learning process in junior high school using ICT.
		2. Design, carry out, and evaluate mathematics learning process in senior high school using ICT.
	COM-1	
	CLO-3	Communicate idea or thought orally and in writing effectively related to School Mathematics course materials.

		1. Communicate idea or thought orally and in writing effectively related to mathematics materials in junior high school.
		2. Communicate idea or thought orally and in writing effectively related to mathematics materials in senior high school.
	COM-2	
	CLO-4	Make decision related to completing School Mathematics course assignments that are students' responsibility.
	SOC-1	
	CLO-5	Demonstrate scientific attitude, critical, and innovative in mathematics learning related to School Mathematics course.
		1. Demonstrate scientific attitude, critical, and innovative in junior high school mathematics learning.
		2. Demonstrate scientific attitude, critical, and innovative in senior high school mathematics learning.
Brief description of module	Studying essential mathematical concepts in junior high school and senior high school, students' and/or teachers' misconception, and learning alternatives through active-reflective learning using presentations.	
Study Material: Learning Materials	• Mathematics in junior high school: (1) whole numbers, exponents, the root of a number, sequence and series along with their learnings; (2) logics, sets, and their learnings; (3) linear equation and inequality, and quadratic equation with their learnings; (4) quadrilateral and triangle along with their learnings; (5) circle and circle equation with their learnings; (6) matrix and vectors and their learnings. • Mathematics in senior high school: (1) 3D shapes (cube, cuboid, prism, pyramid) and its learning; (2) 3D shapes (cylinder, cone, sphere) and its learning; (3) trigonometry and its learning; (4) logarithm and its learning; (5) linear programming and its learning; (6) limit, differential, with their learnings; (7) statistics and probability with their learnings.	
References	**Primary References**	
	[1] Yee Lee Peng, 2006. *Teaching Secondary School Mathematics, A Resource Book*. Singapore : Mc Graw Hill.	
	Supporting References	
	[2] Sultan Alan, Artzt, Alice F. 2011. *The Mathematics That Every Secondary Scool Math Teacher Need To Know*. New York: Routledge. [3] Goos, Merrilyn. Stillman, Gloria. Vale, Colleen, 2007. *Teaching Secondary School Mathematics (Research and Practice for 21 st Century)*. Singapore: CMO Image Printing. [4] Mathematics books for junior high school that are relevant to the applied curriculum. [5] Mathematics books for senior high school that are relevant to the applied curriculum.	
Lecturers	Dr. Masriyah, M.Pd. Dr. Pradnyo Wijayanti, M.Pd. Abdul Haris Rosyidi, M.Pd. Ika Kurniasari, M.Pd.	
Prerequisite Modules	-	

Week	**Final abilities of each stage of learning**	**Assessment**		**Teaching Methodology**		**Learning Materials**	**Weight (%)**
		Indicators	**Assessment Form**	**Offline**	**Online**		
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
1	Understanding whole numbers, eksponents,	• Describing whole numbers,	Quantitative and Tests	Collaborative approach		Whole numbers, eksponents, the root of a number, sequence and	

	the root of a number, sequence and series along with their learnings. (CLO-1.1, CLO-2.1, CLO-3.1, CLO-4, CLO-5.1)	eksponents, the root of a number, sequence and series along with their learnings. • Applying whole numbers, eksponents, the root of a number, sequence and series along with their learnings in daily life.		(discussion and expository) or LMS Vinesa/Google Classroom 3 x 50 minutes		series along with their learnings. [1], [2], [3], and [4]	
2	Understanding rational numbers, percentage, and ratio along with their learnings. CLO-1.1, CLO-2.1, CLO-3.1, CLO-4, CLO-5.1)	• Describing concepts of rational numbers, percentage, and ratio along with their learnings. • Applying concepts of rational numbers, percentage, and ratio along with their learnings in daily life.	Quantitative and Tests	Collaborative approach (discussion and expository) or LMS Vinesa/Google Classroom 3 x 50 minutes		Rational numbers, percentage, and ratio along with their learnings. [1], [2], [3], and [4]	
3	Understanding logics, sets, and their learnings. (CLO-1.1, CLO-2.1, CLO-3.1, CLO-4, CLO-5.1)	• Describing concept of logics, sets, and their learnings. • Applying concept of logics, sets, and their learnings in daily life.	Quantitative and Tests	Collaborative approach (discussion and expository) or LMS Vinesa/Google Classroom 3 x 50 minutes		Logics, sets, and their learnings [1], [2], [3], and [4]	

4	Understanding linear equation and inequality, and quadratic equation with their learnings. (CLO-1.1, CLO-2.1, CLO-3.1, CLO-4, CLO-5.1)	• Describing concepts of linear equation and inequality, and quadratic equation with their learnings. • Applying concepts of linear equation and inequality, and quadratic equation with their learnings.	Quantitative and Tests	Collaborative approach (discussion and expository) or LMS Vinesa/Google Classroom 3 x 50 minutes		Linear equation and inequality, and quadratic equation with their learnings [1], [2], [3], and [4]	
5	Understanding quadrilateral and triangle along with their learnings (CLO-1.1, CLO-2.1, CLO-3.1, CLO-4, CLO-5.1)	• Describing concepts of quadrilateral and triangle along with their learnings. • Applying concepts of quadrilateral and triangle along with their learnings in daily life.	Quantitative and Tests	Collaborative approach (discussion and expository) or LMS Vinesa/Google Classroom 3 x 50 minutes		Quadrilateral and triangle along with their learnings [1], [2], [3], and [4]	
6	Understanding circle and circle equation with their learnings (CLO-1.1, CLO-2.1, CLO-3.1, CLO-4, CLO-5.1)	• Describing concepts of circle and circle equation with their learnings • Applying concepts of circle and circle equation with their learnings in daily life.	Quantitative and Tests	Collaborative approach (discussion and expository) or LMS Vinesa/Google Classroom 3 x 50 minutes		Circle and circle equation with their learnings [1], [2], [3], and [4]	
7	Understanding matrix and vectors and their learnings. (CLO-1.1,	• Describing concepts cardinality of matrix and vectors	Quantitative and Tests	Collaborative approach (discussion and expository) or LMS		Matrix and vectors with their learnings [1], [2], [3], and [4]	

	CLO-2.1, CLO-3.1, CLO-4, CLO-5.1)	with their learnings. • Applying concepts cardinality of matrix and vectors with their learnings in daily life.		Vinesa/Google Classroom 3 x 50 minutes			
8	Midterm Exam						
9	Understanding 3D shapes (cube, cuboid, prism, pyramid) and its learning. (CLO-1.2, CLO-2.2, CLO-3.2, CLO-4, CLO-5.2)	• Describing concept of 3D shapes (cube, cuboid, prism) and its learning. • Applying concept of 3D shapes (cube, cuboid, prism) and its learning in daily life.	Quantitative and Tests	Collaborative approach (discussion and expository) or LMS Vinesa/Google Classroom 3 x 50 minutes		3D shapes (cube, cuboid, prism) and its learning [1], [2], [3], and [5]	
10	Understanding 3D shapes (cylinder, cone, sphere) and its learning. (CLO-1.2, CLO-2.2, CLO-3.2, CLO-4, CLO-5.2)	• Describing concept of 3D shapes (cylinder, cone, sphere) and its learning. • Applying concept of 3D shapes (cylinder, cone, sphere) and its learning in daily life.	Quantitative and Tests	Collaborative approach (discussion and expository) or LMS Vinesa/Google Classroom 3 x 50 minutes		3D shapes (cylinder, cone, sphere) [1], [2], [3], and [5]	
11	Understanding trigonometry and its learning. (CLO-1.2, CLO-	• Describing concept cardinality of trigonometry and its learning.	Quantitative and Tests	Collaborative approach (discussion and expository) or LMS		Trigonometry and its learning [1], [2], [3], and [5]	

	2.2, CLO-3.2, CLO-4, CLO-5.2)	• Applying concept cardinality of trigonometry and its learning in daily life.		Vinesa/Google Classroom 3 x 50 minutes			
12	Understanding logarithm and its learning. (CLO-1.2, CLO-2.2, CLO-3.2, CLO-4, CLO-5.2)	• Describing concept cardinality of logarithm and its learning. • Applying concept cardinality of logarithm and its learning in daily life.	Quantitative and Tests	Collaborative approach (discussion and expository) or LMS Vinesa/Google Classroom 3 x 50 minutes		Logarithm and its learning [1], [2], [3], and [5]	
13	Understanding linear programming and its learning. (CLO-1.2, CLO-2.2, CLO-3.2, CLO-4, CLO-5.2)	• Defining concept of linear programming and its learning • Applying concept of linear programming and its learning	Quantitative and Tests	Collaborative approach (discussion and expository) or LMS Vinesa/Google Classroom 3 x 50 minutes		Linear programming and its learning [1], [2], [3], and [5]	
14	Understanding limit, differential, and integral with their learnings. (CLO-1.2, CLO-2.2, CLO-3.2, CLO-4, CLO-5.2)	• Describing concepts of limit, differential, and integral with their learninss. • Applying concepts of limit, differential, and integral with their learnings.	Quantitative and Tests	Collaborative approach (discussion and expository) or LMS Vinesa/Google Classroom 3 x 50 minutes		Limit, differential, and integral with their learnings [1], [2], [3], and [5]	
15	Understanding statistics and probability with	• Describing concept cardinality of	Quantitative and Tests	Collaborative approach		Statistics and probability with their learnings	

	their learnings. (CLO-1.2, CLO-2.2, CLO-3.2, CLO-4, CLO-5.2)	statistics and probability with their learnings. • Applying concept cardinality of statistics and probability with their learnings.		(discussion and expository) or LMS Vinesa/Google Classroom 3 x 50 minutes		[1], [2], [3], and [5]	
16	Final exam						

Description:

1. **Assessment Weights: 30% Assignment, 20% Participation, 20% Midterm test, and 30% Final Exam**